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A New Genus of PHAEOPHRAGMIOUS Dematiaceae With Pseudoendogenous Conidia

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INSTITUTE OF MICOLOGY
PUBLICATION N.º 44
RECIFE — PERNAMBUCO — BRASIL
— 1956 —

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Publication n.º 44

A NEW GENUS OF PHAEOPHRAGMIOUS *DEMATIACEAE* WITH PSEUDOENDOGENOUS CONIDIA

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Specially invited by the Rector Prof. Joaquim Inácio de Almeida Amazonas to do research in the Institute of Mycology, University of Recife, on tropical fungi.

1956

A NEW GENUS OF *PHAEOPHRAGMIOUS DEMATIACEAE* WITH PSEUDOENDOGENOUS CONIDIA.

R. Ciferri and
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The genera of fungi having pseudoendogenous conidia are not so common as true endogenous phyalosporic fungi.

The former group is characterized by differentiation of the double layered membrane of the conidiophoric end, of which the outer is broken by the pushing-out of the conidium formed into the inner membrane layer.

On a hyphododiate, sterile mycelium of *Meliola* we found a dematiaceous fungus with light-brown, phragmosporeous, truncate-acutate conidia.

The Meliolaceous mycelium is composed by sparingly branched hyphae, with opposite branches, and opposite, simple, ovoidal to cylindric capitate hyphopodia, without mycelic setae, not fructified, on leaves of *Cupania sp.*

It looks as a glabrous species of *Meliola,* subgenus *Irenina,* probably *M. wrightii* Berk & Curt. a common Antillean and South American species, (on *Cupania americana* L.)

One of us ascertained (Ciferri *in* Mycop. et Myc. Appl. vol. VII, pag. 1, 1954) that when a *Meliola* species is "parasitized" by a Moniliaceous fungus, in most cases it is unfructified.

On the upper page of the *Cupania* leaves, the spots are black, irregular in shape and in size (mostly 1 to 5 mm in diameter), single or usually confluent, full black in the central part, blackish to smoke, around, superficial.

The spots without Meliolicolous mycelium are blackish, more or less diffused and poorly fructified.

The fascicles of the Dematiaceous fungus are scattered along

the *Meliola* mycelium, and found, as a rule, on or around the intersection of the hyphae, or on the first sketch of the future perithecium.

In the writers experience, the demonstration of the parasitic habitus of a fungus living on mycelium, is marked by it's localization in the vital or essential point, while the saprophytic especies is distributed along the mycelium or along any other organ of the *Meliola*.

The mycelium is superficial, light brown in colour, composed of sparingly branched hyphae, in some cases subtorulosis, septate, (septa 8-28 u apart), slightly narrowed at the septa, not setosae, or hyphopodiate.

The fascicle is composed of several (4-12) erect or suberect conidiophores, as a rule 6 to 10 in number, rarely straight or curved, as a rule, more or less sinuous to ondulate, rarely subserpentiform, also zig-zag-like, not branched, septate, but not narrowed at the septa, not setosae, nor hyphopodiated, more or less loosely congregated at the base, and never stromatic. The caliber is homogenous, about 5-6 u, and the lenght variable from 100 to 250 u high at most. The base of the conidiophore is not inflated and the tip rounded, always lighter in colour. The septa are 20-30 u apart.

The first delimitation of the sporogenous, apical portion of the conidiophore is marked by a septum, not always evident. The conidium is emerging from the tip as a small, elliptic-clavate enlargement, about 2 u more than the average diameter of the conidiophore. At this stage the double contour of the hyphal tip is quite evident.

As soon as the light, young conidium increases in lenght (about one half of the final lenght) the outer layer of the membrane is broken-out, following an irregular line, as a kind of "collar" but without thickening.

Now the conidium is in the stage of full individualisation, and, judging from dry material, quickly emerging up to the full lenght.

At this stage the young conidium is subhyaline, contrasting with the olivaceous colour of the conidiophore.

As the second half of the conidium is smaller in diameter than the top and the mediane part, we suppose that total disinvagination is rapid. We have no idea of the mechanism for pushing-out of the single conidium.

Apparently the septation of the cinidium is complete or evident when full ripe, namely when the colour is changing from subhyaline to light-brown, by the delimitation of the interseptal protoplasm.

The shape of the conidia is variable, as a rule, fusiform-elongate or clavate-elongate to cylindroidal, always with the upper end rounded (rarely rounded-flattened) and the lower end narrowed to acutate. The maximum diameter is in the median portion or near the rounded end, and the average size is 15-35 u in lenght, 4 to 6 u in width, up to 2-3 u at the acuminate end. The septa are 1-4 in number, as a rule 2-3, with equidistant septa or with smallest cells in the inflated portion, never or almost so in the narrowed portion of the conidium. The conidia are straight or slightly curved and the central cells frequently darker than apical and distal.

The conidium may be narrowed at the septa or not at all.

The germination has not been observed.

The genus is interesting in several ways. While it is a member of the *Dematiaceae Macronemeae-phaeophragmiae* family, it is pertaining to the small group of fungi having the pseudo-endogenous sporulation that has been fully described for *Thielaviopsis basicola by Brierley* (Ann. of Botany vol. XXIX, pag. 483-493, 1915) and by Arnaud and Barthelet (Bull. Soc. Myc. France, vol. LII, pag. 63-79, 1936).

This genus appears to be different from the previously known genera having pseudoendogenous conidia, as *Bloxamia* Berk. & Br., *Chalara* Corda, *Endoconidium* Prill. & Delacr., Malbranchea Sacc. & Penz., *Sporendonema* Desm. ex Fries, *Sporochisma* Berk. & Br., and, of course, *Thielaviopsis* Went.

In the *Dematiaceae* family it is a little allied to the monotypic *Endophragmia* Duvernoy & Maire, of which *E. mirabilis* has been studied by Duvernoy and Maire (Bull. Soc. Myc. France, vol. XXXVI, pag. 86-89, 1929), but differing, at first for the single conidium production and absense of "collars".

The studies of pseudoendogenous conidia were first made by Vuillemin (Bull. Soc. Myc. France, vol. XXII, 1906), for the "hemispore" of *Hemispora stellata* Vuill., now *Sporendonema epizoum* (Corda) Cif. & Red., but this concept has been revised by himself, twenty-five years later (Champignons parasites et mycoses de l'homme, pag. 74, ed. P. Lechevalier — Paris, 1931), introducing the confuse notion of "proconidium" in spite of the exhaustive study made in the meantime by Guéguén (Compt. Rendues Soc. Biol. Paris, vol. LXIV, pag. 32, 1912).

For details about this problem and the endosporulation in *Sporendonema* see Redaelli & Ciferri (Atti Ist. Bot. Univ. Pavia, serie IV, vol. V, pag. 145, 1934).

About the endogenous conidia formation in the genus *Malbranchea* see Baldacci, Vaccari & Ciferri (Mycopath. vol. II, pag. 43,

1939; Atti Ist. Bot. Univ. Pavia, serie IV, vol. IX, pag. 75, 1939).

It must be noted a coincidence. As referred by Saccardo (Syll. Fung. I, pag. 66, 1882) in the description of *Meliola wrightii* Berk. & Curt., it has been noted by these authours: "Conidia interdum floccorum lateribus adnata, triseptata, 30-32 u long". It is possible that in the Cuban specimen the same fungus here described was present.

We are now in condition to propose a new genus: *NASCIMENTOA* nobis, nov. gen. (dedicated to Dra. Maria de Lourdes Nascimento, brazilian mycologist, in Recife).

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NASCIMENTOA, nobis, nov. gen.

Dematiaceus, macronemeus, phaeophragmius; mycelio fusco, superficiale, conidiophora fasciculata, simplicia, brunnea, septata; conidia acrogena, solitaria, hyalina, continua, dein 1-4 septata, fusca, in cellulis conidiogenis apicalibus, basaliter septatis clausula, dein erumpentia, libera.
Typus: **Nascimentoa pseudoendogena**, nobis, n. sp.
Coloniis fuscis, epiphyllis, non maculosis, delimitatis vel confluentibus, plagula Meliolarum efformatis, irregularibus, 1-5 mm latis; mycelio ex hyphis brunneis, ramosis, septatis, simplicibus vel torulosis, 2-4 u diam., composito, caespitula solitaria, 4-12 conidiophoris erectis simplicibus, septatis, brunneis, rectis vel leniter flexuosis, rarius zig-zag undulatis, 100-250 u longis, 5-6 u latis, non incrassatis, efformata; conidiis continuis, hyalinis, dein fuscidulis, 1-4-septatis, acrogenis, singulis, fusato-vel clavato-elongatis aut cylindroideis, rectis vel curvulatis, sursum rotundatis vel rotundato-applanatis, base elongato-attenuata, 15-35 u longis, 4-6 u latis, pro more 2-3 septatis, cellulis aequilateribus, in part superiore efformantibus, cellulis centralibus saepe obscurioribus, ad septa constrictis vel non; conidiis in cellula conidiogena acrogena, basaliter septata, efformatis, ex ejus apice disrupto liberatis.
Habitat — In mycelio **Meliola sp.** Probabiliter **M. wrightti** Berk. & Curt., in foliis vivis **Cupania sp.** Loc. Victoriae — Per. Leg. Severino José da Silva — 6.2.56. Typus 5343, Instituto de Micologia, Universidade do Recife, Prov. Pernambuco, Brasil, Amer. Austr.

SUMÁRIO

Os A. A. estudando fungos de fumagina de Pernambuco assinalaram, associado possivelmente a *Meliola wrightii* Berk. & Curt., cespitulos de um Dematiaceae produtor de conidios pseudoendogenos.

A análise comparativa com outros fungos também dotados de conidios pseudoendogenos, como *Bloxamia* Berk. & Br., *Chalara* Corda, *Endoconidium* Prill. & Delacr., *Malbranchea* Sacc. & Penz., *Sporendonema* Desm. ex Fries, *Sporochisma* Berk & Br. e *Thielaviopsis* Went evidenciou que tais cespitulos correspondem a

um novo gênero, que é então proposto sob o nome de *Nascimentoa*, em homenagem a M. Lourdes Nascimento, micologista do Instituto de Micologia, da Universidade do Recife.

Esse novo gênero caracterisa-se assim:

Micelio fusco, superficial; Dematiaceae, Macronemae, feofragmos, sôbre plagulas de *Meliola;* conidióforos fasciculados, simples, marrons, septados; conidios acrogenos, solitários, hialinos, continuos, depois 1-4-septados, fuscos, irrumpentes da célula apical dos conidióforos.

Tipo — *N. pseudoendogena* Ciferri & Batista n. sp.

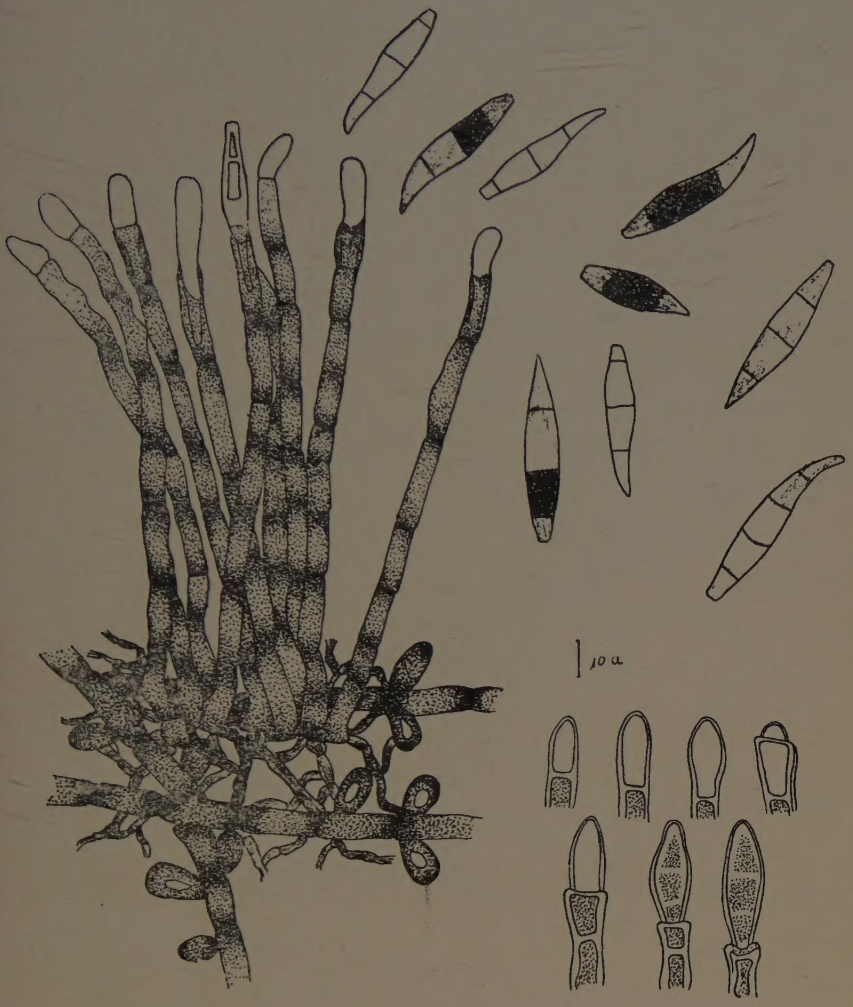

Fig.: 1
NASCIMENTOA PSEUDOENDOGENA Ciferri & Batista n. sp.
Fascicles on mycelium of **Meliola**; conidia in several stages of development. Original.